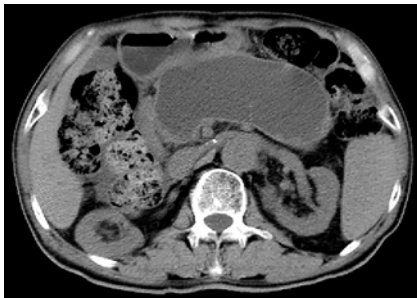
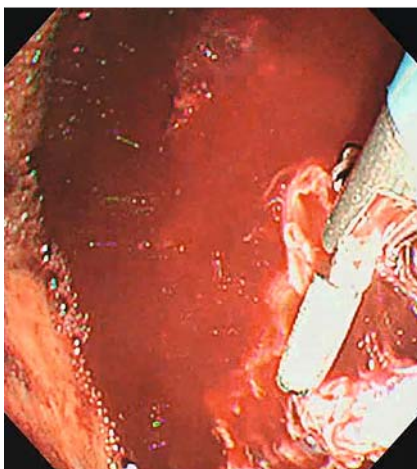


Endoscopic management of bleeding after endoscopic ultrasound-guided drainage of a pancreatic pseudocyst

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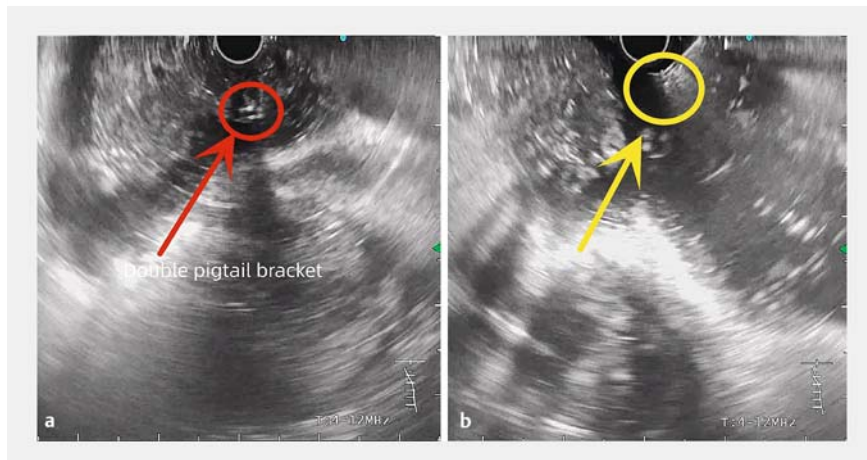


► **Fig. 1** Computed tomography image showing a pancreatic pseudocyst located caudal to the body of the pancreas.



► **Fig. 2** Endoscopic image showing the large amount of blood in the stomach cavity, which made it impossible to identify the position of the stent.

A 64-year-old man was admitted to our hospital with abdominal bloating. Computed tomography revealed a pancreatic pseudocyst located caudal to the body of the pancreas (► **Fig. 1**). Endoscopic ultrasound (EUS)-guided pancreatic pseudocyst drainage was performed. We used a 19-gauge fine-needle aspiration needle to target the gastric wall. A 0.035-inch guidewire was advanced through the needle and the tract was dilated to 12 mm. A plastic double-pigtail stent and a nasal cystic drainage tube (7Fr) were then placed



► **Fig. 3** Endoscopic ultrasound (EUS) images showing: **a** the stent position; **b** application of the foreign body forceps under EUS guidance to grasp the stent.

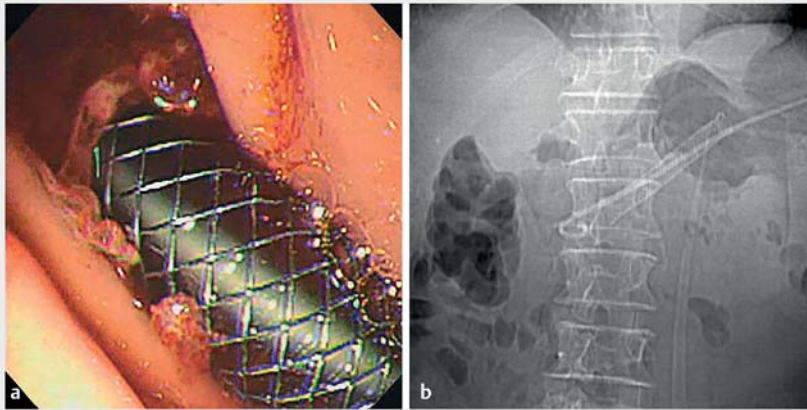


► **Fig. 4** Endoscopic views showing: **a** the partially covered self-expandable metal stent (SEMS) placed over the guidewire; **b** the double-pigtail stent placed inside the SEMS to secure it.

into the passageway between the stomach and the cyst.

The patient developed massive hematemesis less than 24 hours after drainage of a pancreatic pseudocyst. He underwent immediate endoscopy, which revealed a large blood clot in the stomach lumen, with active bleeding still visible after rinsing with saline (► **Fig. 2**). We considered the bleeding site to be at the puncture site but, unfortunately, the con-

tinuous bleeding in the stomach cavity made it impossible to visualize the bleeding site or the position of the stent. The acoustic shadow of the stent was however detected by EUS in the stomach cavity (► **Fig. 3 a**), and the stent was removed with foreign body forceps (► **Fig. 3 b**). The nasal cystic drainage tube was replaced with a guidewire, and a partially covered self-expandable metal stent (SEMS) was placed over the guidewire (► **Fig. 4 a**). A



► **Fig. 5** Images showing the final stent position on: **a** endoscopy, with there being no evidence of active bleeding; **b** fluoroscopic imaging.



► **Video 1** Endoscopic management of bleeding after endoscopic ultrasound-guided drainage of a pancreatic pseudocyst.

double-pigtail stent was placed inside the partially covered SEMS to secure the metal stent (► **Fig. 4b**). The stent placement was felt to be good and no active bleeding was observed during 30 minutes of endoscopic observation (► **Fig. 5**; ► **Video 1**). The stent was removed 2 months after the patient's discharge. During follow-up of 1 year, the patient had no further abdominal discomfort. EUS-guided drainage is an effective treatment for pancreatic pseudocysts [1, 2]. Bleeding is a relatively rare complication, but is tricky to manage. We hope that this case can provide a new idea for the endoscopic treatment of patients with bleeding after EUS-guided pan-

creatic pseudocyst drainage, allowing surgery to be avoided if possible.

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Competing interests

The authors declare that they have no conflict of interest.

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Bibliography

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